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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/027,719	12/20/2001	Mark M. Mleziva	KCX-50-DIV (12731.1)	2252

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DORITY & MANNING, P.A.
POST OFFICE BOX 1449
GREENVILLE, SC 29602-1449

EXAMINER

JUSKA, CHERYL ANN

ART UNIT PAPER NUMBER

1771

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/027,719

Applicant(s)

MLEZIVA ET AL.

Examiner

Cheryl Juska

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23,28 and 29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23,28 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Preliminary Amendment A, filed on December 20, 2001, has been entered. Claims 24-27 have been cancelled as requested. Thus, the pending claims are 1-23, 28, and 29.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 2, 28, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim 2 is indefinite for limiting the second polymer to comprising polyethylene. It is unclear if said polyethylene is in addition to the butylene-propylene copolymer which said second polymer is limited to in claim 1. Is said second polymer a base of polyethylene with a butylene-propylene copolymer additive?
5. Claims 28 and 29 are indefinite for the use of the phrase "improving the unbonded strength of a spunbond nonwoven web." Said phrase is contradictory in that a spunbond web is inherently bonded. Thus, it is unclear how a spunbond web is unbonded.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 6, 7, 9, 10, 11, 16, 17, 18, 19, 21, 23, 28, and 29 are rejected under 35 USC 102(b) as being anticipated by US 5,382,400 issued to Pike.

Applicant claims a process for forming a nonwoven web comprising the steps of:

(a) melt spinning multicomponent filaments of first and second polymers, wherein the first polymer has a faster solidification rate than the second polymer and wherein the second polymer contains a butylene-propylene copolymer,

(b) drawing said filaments,

(c) naturally crimping said filaments, and

(d) forming said filaments into a nonwoven web.

Claim 2 limits the second polymer to comprising polyethylene. Claim 3 limits the butylene-propylene copolymer to being a random copolymer containing up to about 20% by weight butylene, while claim 4 limits the amount to up to 10%, and claim 5 limits the amount to 0.5-5%. Claim 6 limits the first polymer to polypropylene, while claim 7 limits said first polymer to nylon, polyester, or propylene-ethylene copolymers. Claim 8 limits the second polymer to comprise reclaimed polymers of polypropylene, polyethylene, or copolymers of propylene and ethylene. Claim 9 limits the filaments to being less than 2 denier.

Independent claim 10 differs from claim 1 in that the filament is limited to a bicomponent filament wherein the first polymer is polypropylene and the second polymer is a mixture of polyethylene and a butylene-propylene copolymer. Claim 11 limits the filaments to being crimped by subjecting said filaments to a flow of gas. Claim 13 limits the butylene content of the copolymer to 14%. Claim 15 limits the reclaimed polymers to being present in an amount up to 20%. Claim 17 limits the crimps to at least 10 crimps/inch. The limitations of claims 12, 14, and 16 are analogous to the limitations of claims 5, 8, and 9, respectively.

Independent claim 18 is drawn to a nonwoven web of the filaments made from the process of claim 1. The limitations of claims 19-23 are analogous to those of claims 2, 5, 6, 3, and 9, respectively.

Independent claim 28 is drawn to a process for improving the unbonded strength of a spunbond nonwoven web by adding a butylene-propylene copolymer to a first polymer, melt spinning filaments of said first polymer and a second polymer, drawing said filaments, and forming said filaments into a web, wherein said butylene-propylene copolymer is present in the web in an amount sufficient to increase the strength of the web prior to being thermally bonded. Claim 29 limits the amount of the butylene-propylene copolymer to 0.5-5%.

Pike discloses a spunbond nonwoven web made of crimped multicomponent filaments (abstract). The filaments are spun and drawn and then the latent crimp is activated by means of flow of heated air (claims 1 and 3). The multicomponent filament comprises a first polymer of polypropylene or a random copolymer of propylene and ethylene and a second polymer of polyethylene (claim 11). The second polymer may include a crimp additive for enhancing the natural helical crimp of the bicomponent filament in an amount ranging from 5-20% by weight

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(col. 6, lines 47-57). Additionally, the second polymer may also include 2-50% by weight of a butylene-ethylene copolymer or a blend of polybutylene copolymer and a copolymer of propylene and ethylene (col. 6, line 68-col. 7, line 7). The filaments have a denier ranging from 1-8 (col. 9, lines 58-59). The working examples have crimps in the amount ranging from 3.9-16/inch (Examples 11 and 4, respectively), with Example 18 having 10.3 crimps/inch. Thus, claims 1, 2, 6, 7, 9, 10, 11, 16, 17, 18, 19, 21, 23, 28, and 29 are rejected as being anticipated by the cited Pike reference.

8. Claims 1-7, 9-12, 16-23, 28, and 29 are rejected under 35 U.S.C. 102(b) as anticipated by European Patent 395 336 issued to Kaneko et al.

Kaneko discloses a spunbond nonwoven fabric formed from crimped bicomponent filaments. The bicomponent filaments are comprised of (a) a first component of (i) 3-40% by weight of a random copolymer of propylene and ethylene and (ii) 60-97% by weight of polyethylene and (b) a second component of polypropylene (abstract). The ethylene component of the random copolymer (i) is an amount ranging from 2-10% (page 2, lines 37-38). The polypropylene (b) may be a homopolymer or a copolymer with an alpha olefin having 2 or 4-20 carbon atoms or component (b) may be a blend of polypropylene and polyethylene (page 3, lines 12-17). The spun bicomponent filaments have a denier ranging from 1 to 20, preferably 1.5 to 4 (page 3, lines 45-46). Example 1 produced a filament having a 48 crimps/25 mm (or about 48 crimps/inch) (page 4, lines 19-20). The nonwoven is made by spinning the bicomponent filaments, drawing said filaments, crimping the filaments, and collecting said filaments into a spunbond web (page 3, lines 31-41).

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Thus, it can be seen that Kaneko clearly discloses the limitations of Applicant's claims, with the exception of a butylene-propylene random copolymer crimp enhancement additive. As was previously noted, Kaneko teaches an ethylene-propylene random copolymer which enhances the filament crimp due to the difference in shrinkage between components (a) and (b) (page 3, lines 24-27). However, Kaneko also teaches that component (i) may also contain up to 10% of an alpha olefin having 4 to 8 carbons. In other words, the random copolymer of ethylene and propylene (i) may also contain up to 10% of butylene. Thus, the disclosure of Kaneko encompasses the Applicant's claim limitation to a crimp enhancement additive *comprising* a butylene-propylene random copolymer. (Applicant's claims do not exclude the presence of a minor amount of ethylene in the random copolymer of butylene and propylene.) Thus, Applicant's claims are anticipated by the cited Kaneko patent.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 8, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the cited Kaneko reference.

Although Kaneko does not explicitly teach reclaimed polymer, it would have been obvious to one skilled in the art to employ reclaimed polymer in order to reduce cost and environmental waste. Thus, claims 8, 14, and 15 are rejected as being obvious over the prior art.

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11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over the cited Kaneko reference.

Although Kaneko does not explicitly teach butylene in an amount of 14%, it would have been obvious to modify the amount of butylene in order to enhance the crimp of the filament and/or softness of the nonwoven web. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 205 USPQ 215.

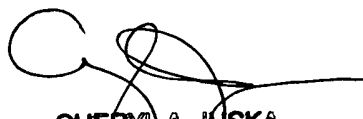
Therefore, claim 13 is rejected over the prior art.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Cheryl Juska whose telephone number is 703-305-4472. The Examiner can normally be reached on Monday-Friday 10am-6pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


CHERYL A. JUSKA
PRIMARY EXAMINER

cj
November 18, 2002